PROCEEDINGS

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RESULTS OF THE BRANNER–AGASSIZ EXPEDITION TO BRAZIL.

I.

THE DECAPOD AND STOMATOPOD CRUSTACEA.

BY MARY J. RATHBUN.

DURING the summer of 1899, Dr. J. C. Branner visited Brazil for the purpose of studying the stone and coral reefs of the coast between Cape St. Roque and Rio de Janeiro. The expenses of the trip were borne chiefly by Professor Alexander Agassiz, of Harvard University. Mr. Arthur W. Greeley, of the San Diego State Normal School, California, accompanied the expedition as naturalist, and the biological collections were made chiefly by him, with such assistance as other members of the party could give from time to time. The collecting was all done between June 3 and August 8, 1899, between Natal, in the State of Rio Grande do Norte, and Maceio, State of Alagôas.

The decapod and stomatopod crustaceans collected number seventy species. Six of these were undescribed, and the known ranges of many other species have been extended. The types of new species are in the U. S. National Museum.

Order DECAPODA.

Family OCYPODIDÆ.

OCYPODE ALBICANS Bosc.

Ocypode albicans Bosc, Hist. Nat. Crust., I, 196, pl. IV, fig. 1, 1802 (figure inaccurate).[1]
Ocypode arenaria Say, Jour. Acad. Nat. Sci. Phila., I, 69, 1817.
Ocypode arenaria Milne Edwards, Hist. Nat. Crust., II, 44, pl. XIX, figs. 13–14, 1837.

Traição, near Mamanguape River; one male.

Maceio, Alagôas, on coral reef and sand beach; two males.

UCA MARACOANI (Latreille).

Ocypode maracoani Latreille, Hist. Nat. Crust., VI, 46, 1803.
Gelasimus maracoani Latreille, Dict. Hist. Nat., XII, 519, 1817; Milne Edwards, Ann. Sci. Nat. (3), XVIII, 144 [108], pl. III, fig. 1, 1852.

Natal, Rio Grande do Norte; six males, one female.

Mangroves, Rio Parahyba do Norte at Cabedello; one male, one female.

UCA MORDAX (Smith).

Gelasimus mordax Smith, Trans. Conn. Acad. Sci., II, 135, pl. II, fig. 3; pl. IV, figs. 4, 4a, 1870.
Uca mordax Rathbun, Proc. U. S. Nat. Mus., XXII, 276, 1900.

Pernambuco, on mangroves; one male.

UCA THAYERI sp. nov.

Plate VIII, figs. 1 and 2.

Carapace very broad in its anterior fourth, narrowing rapidly in its posterior three-fourths; antero-lateral angles almost rectangular, blunt. Sometimes the carapace is narrower at the orbital angles than a little behind that point, caused by the curving inward, at the lateral angle, of one or both of the lateral margins. The dorsal furrows are deep, especially the cervical, and the transverse gastro-cardiac furrow; less deep are the obliquely longitudinal branchial furrow and the post-orbital. Surface finely and densely granulate through the lens, and tomentose, the hair retaining particles of mud.

[1] I have restored Bosc's name to this crab, as his description was made from specimens on the coast of Carolina, where no other species of the genus occurs. The fact that in the figure the artist has represented the eyes with stalks beyond the corneæ does not, I think, invalidate the species. Say was the first binomial writer to use the specific name *arenaria*.

Front very narrow, not linear nor spatuliform, but subtriangular, at base or posteriorly less than one-fifth the width between the antero-lateral angles of the carapace, anteriorly truncate or nearly so; sides oblique and almost straight. Superior orbital surface, or eyebrow, shallow, not varying much in length throughout its width; margins finely granulate. Inferior margin of orbit with large truncate tubercles, increasing in size and distance apart toward the outer extremity.

Large cheliped very heavy. Merus and carpus elongate, thick, rugose on the outer surface, and without armed margins. Outer surface of palm coarsely tuberculate on its upper half, the tubercles gradually becoming fine granules below; upper and lower margins set off by deep grooves. Inner surface of palm with a ridge marked by a single line of large tubercles, leading obliquely upward from the lower margin to the carpal cavity, where it turns at a little less than a right angle and is continued less than half way to the upper margin, or when continued further, the tubercles are obsolete. On the palm at the base of the dactylus are two tuberculate lines, the distal one very short; both are slightly oblique to the lower margin. In full grown males the fingers are very long, the lower margin of the propodus sinuous, the pollex bent down for its distal third. The dactylus equals or overreaches the pollex. The prehensile tubercles are irregular, but not strikingly so. The dactylus is roughened at its base on the upper side, and has a short longitudinal groove on the outer side below the upper margin.

The smaller cheliped is rather long, the fingers longer than the palm and somewhat gaping to the tips. The meral joints of the ambulatory legs are dilated and very broad, especially those of the second and third pairs.

TABLE OF DIMENSIONS.

Locality.	Sex.	Length.	Width at antero-lateral angles.	Width at about ⅓ the distance behind antero-lateral angles.	Width between last pair of legs.	Width in front of bases of penultimate pair of legs.	Length of propodus of larger cheliped.	Width of same.	Length of dactylus.
Rio Parahyba do Norte.	♂	17.2	27.1	27.5	11.6	21	48.3	14.5	35.4
do.	♀	13	19	17.5	9.5	15.5			
do.	♂	15	23.4	22.5	10.5	17.3	42.5	12.7	31 6

Sexual and age variations.—Old males show a tendency to widen behind the antero-lateral angles; this tendency is stronger on

the side of the large claw than on the side of the small one. In males which are young or have not reached their fullest development, the pollex of the large chela is straight, not bent down, and the lower margin of the propodus is convex, not sinuous. The meral joints of the ambulatory legs are wider in the female than in the male, as is the case in other species of the genus.

Range.—This species was first taken by the Thayer Expedition on the coast of Brazil, at Rio Parahyba do Norte, Saõ Matheos and Victoria. Specimens from these localities are in the Museum of Comparative Zoölogy, and one male from the Rio Parahyba do Norte is in the U. S. National Museum. In 1884, the 'Albatross' collected at Jamaica one male, the claw of which was not reproduced at its last shedding.

Types.—Eight males and one female were taken on the Branner-Agassiz Expedition, among the mangroves on the Rio Parahyba do Norte at Cabedello. Cat. No. 23753.

Additional locality.—Natal, Rio Grande do Norte; one male.

UCA SPINICARPA Rathbun.

Uca spinicarpa RATHBUN, Amer. Nat., XXXIV, 586, 1900.

Mamanguape stone reef; one male, soft shell.

This specimen is too shapeless to be determined with certainty, but it appears to be *U. spinicarpa*, which has been taken in the Gulf of Mexico on the coast of Alabama, Mississippi, Texas, and Mexico. The species is distinguished by the truncate anterior margin of the front between the eyes, and the outline of the lateral margins, which are straight and subparallel in their anterior portion, and then curve abruptly inward and backward. The carpus of the large cheliped has a stout spine or tooth at the middle of its inner surface. The inner face of the palm has a prominent crest crowned by a single row of large tubercles extending obliquely upward from the lower margin to the cavity in which the carpus fits, thence it turns at a right angle and meets the upper margin; there are two rows of tubercles at the base of the dactylus; the remainder of the surface is smooth or nearly so.

UCA LEPTODACTYLA Rathbun.

Uca leptodactyla RATHBUN, in Rankin, Ann. N. Y. Acad. Sci., XI, No. 12, 227, 1898, and synonymy.

Mangroves, Rio Parahyba do Norte; one male.

Family GECARCINIDÆ.

UCIDES CORDATUS (Linnæus).

Cancer cordatus LINNÆUS, Amœn. Acad., VI, 414, 1763.
Uca una GUÉRIN, Icon. Règne Anim. Cuvier, pl. v, fig. 3, ♀.
Uca cordata WHITE, List Crust. Brit. Mus., 31, 1847.
Ucides cordatus RATHBUN, Ann. Inst. Jamaica, I, 25, 1897, and synonymy.

Mangroves, Rio Parahyba do Norte, Cabedello; three females.

Family GRAPSIDÆ.

GONIOPSIS CRUENTATUS (Latreille).

Grapsus cruentatus LATREILLE, Hist. Nat. Crust., VI, 70, 1803.
Grapsus (Goniopsis) cruentatus DE HAAN, Fauna Japon., 33, 1835.
Goniograpsus cruentatus DANA, Crust. U. S. Expl. Exped., 342, 1852; atlas, pl. XXI, fig. 7, 1855.

Rio Parahyba do Norte, Cabedello, on mangroves; one male, one female.

Pernambuco, on mangroves; three males.

PACHYGRAPSUS TRANSVERSUS Gibbes.

Pachygrapsus transversus GIBBES, Proc. Amer. Assoc. Adv. Sci., III, 181, 1850.
Goniograpsus innotatus DANA, Proc. Acad. Nat. Sci. Phila., 249, 1851; Crust. U. S. Expl. Exped., 345, 1852; atlas, pl. XXI, fig. 9, 1855.

Mamanguape stone reef; two males.

Rio Parahyba do Norte, Cabedello, on mangroves; one male, one female.

Rio Goyanna stone reef; four males.

Pernambuco stone reef; one male.

Stone reef at Boa Viagem, five miles south of Pernambuco; one male.

Coral reef, Maceio, Alagôas; one male, one female.

PACHYGRAPSUS GRACILIS (Saussure).

Metopograpsus gracilis SAUSSURE, Mém. Soc. Phys. Hist. Nat. Genève, XIV, 443, pl. II, fig. 15, 1858.
Pachygrapsus gracilis STIMPSON, Ann. Lyc. Nat. Hist. N. Y., X, 113, 1871.

Rio Parahyba do Norte, on mangroves; one male, one female.

SESARMA (HOLOMETOPUS) RECTUM Randall.

Sesarma recta RANDALL, Jour. Acad. Nat. Sci. Phila., VIII, 123, 1839.
Sesarma mullerii A. MILNE EDWARDS, Nouv. Arch. Mus. Hist. Nat. Paris, V, 27, 1869.

Pernambuco, on mangroves; one male, one female.

SESARMA (HOLOMETOPUS) MIERSII Rathbun.

Sesarma (*Holometopus*) *miersii* RATHBUN, Proc. Biol. Soc. Washington, XI, 91, 1897, and synonymy.

Rio Parahyba do Norte, Cabedello, on mangroves; one male.

ARATUS PISONII Milne Edwards.

Sesarma pisonii MILNE EDWARDS, Hist. Nat. Crust., II, 76, pl. XIX, figs. 4 and 5, 1837.
Aratus pisoni MILNE EDWARDS, Ann. Sci. Nat. (3), XX, 187, 1853.

Rio Parahyba do Norte, Cabedello, on mangroves; five males, nine females.

Lagoa do Norte, Maceio, on mangroves; three females.

PLAGUSIA DEPRESSA (Fabricius).

Cancer depressus FABRICIUS, Syst. Ent., 406, 1775.
Plagusia depressus SAY, Jour. Acad. Nat. Sci. Phila., I, 100, 1817.

Mamanguape stone reef; one female.

Rio Goyanna stone reef; three females.

Pernambuco stone reef; one female.

Color.—Brilliant; for the most part a white ground thickly covered with fine red dots; also blotches of clear red.[1]

Family **PILUMNIDÆ.**

CARPILIUS CORALLINUS (Herbst).

Cancer corallinus HERBST, Natur. Krabben u. Krebse, I, 133, pl. V, fig. 40, 1783.
Carpilius corallinus LEACH, in Desmarest, Consid. sur les Crust., 104, 1825.

Goyanna stone reef; one male.

CYCLOXANTHOPS DENTICULATUS (White).

Xantho denticulatus WHITE, Ann. Mag. Nat. Hist. (2), II, 285, 1848. A. MILNE EDWARDS, Crust. Rég. Mex., 252, pl. XLV, fig. 2, 1879.
Cycloxanthops denticulatus RATHBUN, Ann. Inst. Jamaica, I, 14, 1897.

Stone reef at Boa Viagem; one female.

Coral reef, Maceio, Alagôas; thirteen males, seven females.

Color.—Gay and not constant, varying from shades of light purplish red through bright red to orange red.

[1] Color notes have been made from specimens in formalin.

MENIPPE NODIFRONS Stimpson.

Pseudocarcinus rumphii MILNE EDWARDS, Hist. Nat. Crust., I, 408, 1834. Not *Cancer rumphii* FABRICIUS.
Menippe rumphii DANA, Crust. U. S. Expl. Exped., I, 179, 1852. A. MILNE EDWARDS, Crust. Rég. Mex., 263, pl. XLVIII, fig. 4, 1879.
Menippe nodifrons STIMPSON, Ann. Lyc. Nat. Hist. N. Y., VII, 53, 1859.

Mamanguape stone reef; two young.

Rio Goyanna stone reef; one female.

Pernambuco stone reef; three young.

Pernambuco stone reef at Ilha de Nogueira; one young.

Coral reef, Maceio, Alagôas; one male, two females.

PILUMNUS RETICULATUS Stimpson.

Pilumnus reticulatus STIMPSON, Ann. Lyc. Nat. Hist. N. Y., VII, 214, 1860.
Pilumnus tessellatus A. MILNE EDWARDS, Crust. Rég. Mex., 295, pl. LI, fig. 2, 1880.

Pernambuco stone reef at Ilha de Nogueira; one male, one female.

PILUMNUS ANDREWSII Rathbun.

Pilumnus andrewsii RATHBUN, Bull. Lab. Nat. Hist. State Univ. Iowa, IV, 266, pl. V, fig. 2, 1898.

Coral reef, Maceio, Alagôas; one male.

In this specimen, which is a little smaller than the type, the frontal lobes are more sinuous than truncate, the lateral spines are less acuminate, and the spinules of the carpal joints of the chelipeds less sharp.

PILUMNUS DASYPODUS Kingsley.

Pilumnus dasypodus KINGSLEY, Proc. Boston Soc. Nat. Hist., XX, 155, 1879.
Pilumnus vinaceus A. MILNE EDWARDS, Crust. Rég. Mex., 283, pl. L, fig. 2, 1880.

Pernambuco stone reef at Ilha de Nogueira; three females.

Stone reef at Boa Viagem; three males, one female.

Coral reef, Maceio, Alagôas; one male, one female.

LEPTODIUS FLORIDANUS (Gibbes).

Chlorodius floridanus GIBBES, Proc. Amer. Assoc. Adv. Sci., III, 175, 1850.
Leptodius floridanus A. MILNE EDWARDS, Crust. Rég. Mex., 268, pl. XLIX, fig. 2, 1880.

Mamanguape stone reef; two males, one female.

Rio Goyanna stone reef; three males, one female.

Coral reef, Maceio, Alagôas; one male, three females.

EUPANOPEUS HERBSTII (Milne Edwards).

Panopeus herbstii Milne Edwards, Hist. Nat. Crust., I, 403, 1834. Benedict and Rathbun, Proc. U. S. Nat. Mus., XIV, 358, pl. XIX, figs. 1 and 2; pl. XXIII, figs. 10–12, 1891, and synonymy.
Eupanopeus herbstii Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, IV, 273, 1898.

Mamanguape stone reef; one female.

Rio Parahyba do Norte, Cabedello, on mangroves; four males, five females.

EUPANOPEUS OCCIDENTALIS (Saussure).

Panopeus occidentalis Saussure, Rev. Mag. Zoöl. (2), IX, 502, 1857. Benedict and Rathbun, Proc. U. S. Nat. Mus., XIV, 360, pl. XX, fig. 3; pl. XXIII, fig. 14, 1891, and synonymy.
Eupanopeus occidentalis Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, IV, 273, 1898.

Rio Parahyba do Norte, on mangroves; two males.

Pernambuco stone reef; one female.

EUPANOPEUS AMERICANUS (Saussure).

Panopeus americanus Saussure, Rev. Mag. Zoöl. (2), IX, 502, 1857; Mém. Soc. Phys. Genève, XIV, 432, pl. 1, fig. 8, 1857.
Panopeus areolatus Benedict and Rathbun, Proc. U. S. Nat. Mus., XIV, 361, pl. XXI, fig. 3, 1891.
Eupanopeus americanus Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, IV, 273, 1898.

Rio Parahyba do Norte, on mangroves; one female.

EUPANOPEUS BERMUDENSIS (Benedict and Rathbun).

Panopeus wurdemannii Benedict and Rathbun, Proc. U. S. Nat. Mus., XIV, 372, pl. XXIV, figs. 6 and 7, 1891 (not *P. wurdemannii* Gibbes).
Panopeus bermudensis Benedict and Rathbun, Proc. U. S. Nat. Mus., XIV, 376, pl. XX, fig. 2; pl. XXIV, figs. 14 and 15, 1891.
Eupanopeus bermudensis Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, IV, 273, 1898.

Coral reef, Maceio, Alagôas; one female.

EUPANOPEUS HARTTII (Smith).

Panopeus harttii Smith, Proc. Boston Soc. Nat. Hist., XII, 280, 1869; Trans. Conn. Acad. Sci., II, pp. 5 and 34, pl. 1, fig. 5, 1869.
Eupanopeus harttii Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, IV, 273, 1898.

Coral reef, Maceio, Alagôas; two males.

EUPANOPEUS ABBREVIATUS (Stimpson).

Xantho parvulus MILNE EDWARDS, Hist. Nat. Crust., I, 395, 1834; not *Cancer parvulus* FABRICIUS.
Panopeus abbreviatus STIMPSON, Ann. Lyc. Nat. Hist. N. Y., VII, 211, 1860.
Eurypanopeus parvulus A. MILNE EDWARDS, Crust. Rég. Mex., 322, pl. LIX, fig. 5, 1880.
Eurypanopeus abbreviatus A. MILNE EDWARDS, Crust. Rég. Mex., 320, pl. LIX, fig. 3, 1880.
Panopeus parvulus BENEDICT and RATHBUN, Proc. U. S. Nat. Mus., XIV, 369, pl. XXI, fig. 1, pl. XXIII, figs. 2 and 3, 1891.

Mamanguape stone reef; five males, seven females.

Rio Goyanna stone reef; two males.

Boa Viagem stone reef; one male, one female.

Maceio coral reef; three males, one female.

ERIPHIA GONAGRA (Fabricius).

Cancer gonagra FABRICIUS, Sp. Ins., 505, 1781.
Eriphia gonagra MILNE EDWARDS, Hist. Nat. Crust., I, 426, pl. XVI, figs. 16 and 17, 1834.

Mamanguape stone reef; one male.

Rio Goyanna stone reef; seven males, two females.

Pernambuco stone reef; three males, two females.

Boa Viagem stone reef; one female, soft shell.

Maceio coral reef; eight males, three females.

Color.—Variable, but always bright. Some are reddish brown or yellowish brown with darker patches; spines and margins of front and orbits orange. Others show no red nor yellow, only browns and orange. Legs with light yellow ground, covered in great part with fine red dots. Claws with the tubercles of the upper half dark red or blue, of the lower half yellow; fingers dark red.

DOMECIA HISPIDA Eydoux and Souleyet.

Domecia hispida EYDOUX and SOULEYET, Voy. *Bonite*, I, Crust., 235, 1842; atlas, pl. II, figs. 5–10 (*Domécie hérissée*, on plate).

Maceio coral reef; one female.

Family **PORTUNIDÆ.**

CALLINECTES DANÆ Smith.

Lupa dicantha DANA, Crust. U. S. Expl. Exped., I, 272, 1852; atlas, pl. XVI, fig. 7, 1855.
Callinectes danæ SMITH, Trans. Conn. Acad. Sci., II, 7, 1869.

Mamanguape stone reef; one young female.

Rio Parahyba do Norte, Cabedello, on mangroves; one male, one young female.

CALLINECTES MARGINATUS (A. Milne Edwards).

Neptunus marginatus A. Milne Edwards, Arch. Mus. Hist. Nat. Paris, x, 318, pl. xxx, fig. 2, 1861.
Callinectes larvatus Ordway, Boston Jour. Nat. Hist., vii, 573, 1863.
Callinectes marginatus Rathbun, Proc. Biol. Soc. Washington, xi, 149, 1897, and synonymy.

Mamanguape stone reef; four young.

Rio Goyanna stone reef; one male.

Rio Parahyba do Norte, on mangroves; two young.

Pernambuco stone reef; one male.

Maceio coral reef; four males, one young female.

Color.—Dull brown, with areas of bluish black; claw brown above, blackish blue below and on the inner side; last segments of swimming feet a brighter brown.

ARENÆUS CRIBRARIUS (Lamarck).

Portunus cribrarius Lamarck, Hist. Nat. Anim. sans Vert., v, 259, 1818.
Arenæus cribrarius Dana, Crust. U. S. Expl. Exped., i, 290, 1852; atlas, pl. xviii, fig. 2, 1855.

Mamanguape stone reef; one male, two females.

Family **MAIIDÆ.**

ACANTHONYX PETIVERII Milne Edwards.

Acanthonyx petiverii Milne Edwards, Hist. Nat. Crust., i, 343, 1834.
Acanthonyx petiveri A. Milne Edwards, Crust. Rég. Mex., 143, pl. xxvii, fig. 7, 1878, and synonymy.

Mamanguape stone reef; one female.

Boa Viagem stone reef; one female.

MICROPHRYS BICORNUTUS (Latreille).

Pisa bicornuta Latreille, Encyc. Méth., Hist. Nat., Insectes, x, 141, 1825.
Microphrys bicornutus A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, viii, 247, 1872; Crust. Rég. Mex., 61, pl. xiv, figs. 2–4, 1875, and synonymy.

Mamanguape stone reef; two males.

Pernambuco stone reef at Ilha de Nogueira; two males, four females.

Maceio coral reef; five males, five females.

MITHRAX VERRUCOSUS Milne Edwards.

Mithrax verrucosus Milne Edwards, Mag. Zoöl., ii, pl. iv, 1832.

Mamanguape stone reef; one young.

Pernambuco stone reef at Ilha de Nogueira; one young.

Maceio coral reef; two young.

MITHRAX BRAZILIENSIS Rathbun.

Mithrax braziliensis RATHBUN, Proc. U. S. Nat. Mus., XV, 268, pl. XXXVI, fig. 2, 1892.

Maceio coral reef; two males.

Color.—A rich dark crimson.

MITHRAX FORCEPS (A. Milne Edwards).

Mithraculus forceps A. MILNE EDWARDS, Crust. Rég. Mex., 109, pl. XXIII, fig. 1, 1875.
Mithrax forceps MIERS, *Challenger* Rept., Zoöl., XVII, pp. 87 and 88, 1886. RATHBUN, Proc. U. S. Nat. Mus., XV, 269, 1892, and synonymy.

Natal, Rio Grande do Norte; two males.

Pernambuco stone reef at Ilha de Nogueira; one male.

Maceio coral reef; four males, seven females.

MITHRAX CORYPHE (Herbst).

Cancer coronatus HERBST, Natur. Krabben u. Krebse, I, 184, pl. XI, fig. 63, 1785; not *C. coronatus* MOLINA, 1782.
Cancer coryphe HERBST, op. cit., III, Heft 2, p. 8, 1801.
Mithrax coronatus MIERS, *Challenger* Rept., Zoöl., XVII, pp. 87, 89, 1886. RATHBUN, Proc. U. S. Nat. Mus., XV, 272, 1892, and synonymy.
Mithrax coryphe RATHBUN, Ann. Inst. Jamaica, I, 11, 1897.

Rio Goyanna stone reef; two males.

Pernambuco stone reef at Ilha de Nogueira; three males.

Boa Viagem stone reef; two females.

Maceio coral reef; eleven males, four females.

TELEOPHRYS CRISTULIPES Stimpson.

Teleophrys cristulipes STIMPSON, Ann. Lyc. Nat. Hist. N. Y., VII, 190, pl. II, fig. 2, 1860.
Mithrax cristulipes RATHBUN, Proc. U. S. Nat. Mus., XV, 273, 1892, and synonymy.

Maceio coral reef; five males, four females.

Family **DROMIIDÆ.**

DROMIA ERYTHROPUS (George Edwards).

Cancer marinus chelis rubris CATESBY, Nat. Hist. Carolina, Florida and Bahama Islands, II, 37, pl. 37, 1743.
Cancer erythropus GEORGE EDWARDS, Catalogue of Animals in Catesby's Nat. Hist. of Carolina, with the Linnæan names, 1771.
Dromia lator MILNE EDWARDS, Hist. Nat. Crust., II, 174, 1837.
Dromia erythropus RATHBUN, Ann. Inst. Jamaica, I, 39, 1897.

Pernambuco stone reef at Ilha de Nogueira; one young male.

Family PAGURIDÆ.

PETROCHIRUS INSIGNIS (Saussure).

Pagurus insignis Saussure, Mém. Soc. Phys. Hist. Nat. Genève, XIV, 453 [37], pl. III, fig. 20, 1858.

Rio Goyanna stone reef; one specimen.

Maceio coral reef; one specimen.

Color.—Ambulatory legs with four transverse reddish bands.

CALCINUS SULCATUS (Milne Edwards).

Pagurus sulcatus MILNE EDWARDS, Ann. Sci. Nat. (2), VI, 279, 1836.
Calcinus sulcatus STIMPSON, Proc. Acad. Nat. Sci. Phila., X, 234 [72], 1858.

Mamanguape stone reef; one specimen.

Pernambuco stone reef; two specimens.

Maceio coral reef; two specimens.

Color.—Gastric region green or greenish in the center, dark red at the sides. Eye stalks light brownish yellow in basal half, turning to red distally; band next to the cornea white; cornea black. Claws dark brown, with red margins; fingers deep yellow, white near the tips. Second and third pairs of feet yellow, dactyli with a red band in the center, nails black.

CLIBANARIUS VITTATUS (Bosc).

Pagurus vittatus Bosc, Hist. Nat. Crust., II, 78, pl. XII, fig. 1, 1802.
Clibanarius vittatus STIMPSON, Proc. Acad. Nat. Sci. Phila., X, 235 [73], 1858.

Mamanguape stone reef; two specimens.

Rio Parahyba do Norte, Cabedello, on mangroves; six specimens.

CLIBANARIUS CUBENSIS (Saussure).

?*Cancer sclopetarius* HERBST, Natur. Krabben u. Krebse, II, 23, pl. XXIII, fig. 3, 1791.
Pagurus cubensis SAUSSURE, Mém. Soc. Phys. Hist. Nat. Genève, XIV, 455 [39], 1858.
Clibanarius sclopetarius STIMPSON, Proc. Acad. Nat. Sci. Phila., X, 235, 1858. RATHBUN, Ann. Inst. Jamaica, I, 43, 1897.

Rio Parahyba do Norte, Cabedello, on mangroves; six specimens.

CLIBANARIUS ANTILLENSIS Stimpson.

Clibanarius antillensis STIMPSON, Ann. Lyc. Nat. Hist. N. Y., VII, 85, 1859.

Rio Goyanna stone reef; one specimen.

Color.—Claws orange-red with a white spot at each spine. Ambulatory legs with a white stripe through the middle of the outer and of the inner surface.

Family PORCELLANIDÆ.

PETROLISTHES ARMATUS (Gibbes).

Porcellana armata GIBBES, Proc. Amer. Assoc. Adv. Sci., III, 190, 1850.
Porcellana leporina HELLER, Reise *Novara*, 78, pl. VI, fig. 7, 1865.
Petrolisthes armatus STIMPSON, Proc. Acad. Nat. Sci. Phila., X, 227, 1858.

Mamanguape stone reef; eleven specimens.

Rio Goyanna stone reef; six specimens.

Maceio coral reef; one specimen.

Color.—Bright red and yellowish mottled. On the chelipeds the red strongly predominates, the tubercles being red, the interspaces yellow. Propodal joints of ambulatory legs with two light transverse bands, one at the distal end, the other near the proximal.

PETROLISTHES SEXSPINOSUS (Gibbes).

Porcellana sexspinosa GIBBES, Proc. Amer. Assoc. Adv. Sci., III, 190, 1850.
Porcellana egregia GUÉRIN, in La Sagra's Hist. Cuba, 2d part, vol. VIII (Atlas), pl. II, fig. 1, 1857.
Petrolisthes sexspinosus STIMPSON, Proc. Acad. Nat. Sci. Phila., X, 227, 1858.

Mamanguape stone reef; three specimens.

Stone reef at Boa Viagem, Pernambuco; three specimens.

Coral reef, Maceio, Alagôas; seven specimens.

Color.—Dark crimson in transverse broken lines on a white ground. Similar oblique lines on chelipeds, showing a tendency to break up into spots; outer margin, and also the margin of the dactylus, with a row of crimson spots. Ambulatory legs with meral joints spotted; carpal joints speckled with crimson and with a white stripe on the upper surface; propodal joints crimson with two white bands, one at the distal end, the other on the proximal half. Dactyli crimson, with white toward the nail.

PETROLISTHES SERRATUS Henderson.

Petrolisthes serratus HENDERSON, *Challenger* Rept., Zool., XXVII, 107, pl. XI, fig. 2, 1888.

The single specimen, a male, agrees with Henderson's description and figure, excepting that the inner border of the carpus of the right cheliped (the left is missing) has only four teeth, the small distal fifth tooth figured by Henderson being absent, and the dactylus is shorter than in the type, being 4.2 mm. long, while the inner margin of the propodus measures 6.4 mm. The dactylus has a large basal tooth, and a smaller tooth next it. Henderson says that the dactylus is "almost equal in length to the hand." His type was from off Bahia in

7 to 20 fathoms. The specimen in hand is from the coral reef at Maceio, Alagôas; like the type it is an adult male, but smaller; the carapace is cracked, so that it cannot be accurately measured.

The ground color is a deep crimson, covered with narrow and closely interlacing stripes of white, leaving small irregular interstices of crimson. The stripes are narrower and the interstices smaller near the margin of the carapace. Chelipeds similar in coloring. On the ambulatory legs the white stripes are broken, forming small irregular detached patches of white; the propodal joints have three narrow transverse bands of white, two at the proximal end, and one near the distal end.

P. serratus is closely allied to, if not identical with, *P. amœnus* (Guérin).

PISOSOMA RIISEI Stimpson.

Pisosoma riisei STIMPSON, Ann. Lyc. Nat. Hist. N. Y., VII, 75, 1859.
Pisosoma glabra KINGSLEY, Proc. Acad. Nat. Sci. Phila., XXXI, 406, pl. XIV, fig. 2, 1879 [1880].

Coral reef, Maceio, Alagôas; two females.

In these specimens the front is not the same: in one the upper margin is nearly straight, in the other more advanced at the middle. In the one cheliped present, the carpus is about as broad as long, opposed to Kingsley's figure rather than to his description; the inner margin is sinuous. The palm is subtriangular, wider at the base of the dactylus than its inner length. The outer marginal crest of the palm is continued two-thirds the length of the carpus, and on that segment is more or less tuberculous or broken up by oblique rugæ. Dactylus with a small basal tooth, which when the fingers are closed, fits against a tooth on the propodus between the two fingers; upper margin with a longitudinal groove on the basal half. Fingers gaping. The types of *P. glabra* Kingsley, with which these have been compared, are smaller, the fingers shut tight and their tips cross; the inner margin of the carpus is more distinctly dentate.

Dimensions of female bearing eggs.—Length 4.5 mm.; breadth 5.3 mm.

Color.—A beautiful light crimson, with a small white spot on the lobe above the antenna and behind it on the margin a larger white spot; these two spots unite below the dorsal surface forming a white band extending to the cheliped. A small white dot on the branchial region adjoining the cardiac region. Chelipeds crimson, tips of fingers white. Ambulatory legs crimson with white bands, a narrow one at either end of the propodus and a wide one covering the proximal half of the merus.

PISOSOMA GREELEYI sp. nov.

Pl. VIII, fig. 4.

Male. Carapace slightly broader than long, subcircular. Front with a double margin, the upper margin arcuate, continuous with the line of the orbit; the lower margin produced downwards in an acute median tooth and forming a rectangular preorbital tooth. Postorbital tooth small and blunt; behind this on the antero-lateral margin there is a shallow lobe followed by a notch at the cervical suture. Lateral margin marked by a narrow raised line which turns inward on the carapace at the posterior third of the branchial region. Protogastric lobes large, separated by a shallow median sinus. Cervical sutures deep. Branchio-cardiac furrows also well marked. A slight transverse depression across the middle of the branchial region. Surface ornamented with scattered scabrous granules, posterior and postero-lateral portions crossed by fine rugose lines.

The upper surface of the merus of the chelipeds is crossed by fine transverse rugæ; inner margin with a blunt and granular prominence near the distal angle; distal margin of lower surface with two or three spinules. Upper surface of carpus, propodus and dactylus covered with coarse granules, some of which are large and tubercular. The carpus at its widest portion is about as wide as long; its inner margin is convex, and furnished with several small irregular granulated teeth. The outer margin of the propodus is convex, with a slight sinuosity toward the distal end of the palm. The palm is as wide as its length on the inner side. The fingers gape when closed; the tip of the dactylus fits into a sinus on the inner edge of the pollex near the tip. Ambulatory legs smooth. Last three segments sparsely hairy.

Dimensions.—Male, length 5 mm.; width 5.2; length of propodus of cheliped 5.8; width of same 3. Female with eggs, length 5.2; width 6; length of propodus of cheliped 7.5; width of same 4.3 mm. Females are more swollen laterally than males.

Color.—In formalin, a light brick red. Terminal half of fingers white.

Type locality.—Coral Reef, Maceio, Alagôas; three males, three females. Cat. No. 23754.

Additional localities.—Mamanguape stone reef, one female with eggs; Pernambuco stone reef at Ilha de Nogueira, one male.

PACHYCHELES MONILIFER (Dana).

Porcellana monilifera DANA, Crust. U. S. Expl. Exped., I, 413, 1852; pl. XXVI, fig. 3, 1855.
Pachycheles moniliferus STIMPSON, Proc. Acad. Nat. Sci. Phila., x, 228 [66], 1858.

Mamanguape stone reef; one specimen.
Pernambuco stone reef at Ilha de Nogueira; five specimens.
Stone reef at Boa Viagem, Pernambuco; nine specimens.
Color.—Light yellowish red, deeper on the chelipeds.

PORCELLANA ROSEA sp. nov.

Pl. VIII, fig. 3.

Length and breadth of carapace subequal. Carapace subtriangular. The front viewed from above has a well-marked median tooth, and between the middle and the orbit two sinuses. The orbit is very small and has a preorbital and a postorbital lobe. The lateral margin is interrupted by a slight notch at the cervical suture. Behind the suture there is a well-defined, coarsely granulated margin set off from the carapace by a furrow. This margin at a point far back on the branchial region turns obliquely inward and backward upon the carapace. The posterior margin has a deep median indentation. The carapace is very convex in an antero-posterior direction, slightly convex from side to side. A deep median furrow leads from the frontal tooth to the mesogastric region, the anterior portion of which is faintly outlined. On either side of the median furrow are two tubercular elevations. From the notch anterior to the preorbital lobe a furrow runs obliquely backward and joins the cervical suture, which is very deep. The cardiac region is sufficiently distinct. A shallow furrow, curving forward, crosses the branchial region transversely. The surface is covered with large punctæ bearing short bristles, and the branchial region has scattered irregular tubercles.

The merus of the cheliped has a blunt inner distal tooth; distal and outer margins of upper surface bordered by acute tubercles. Carpus with inner and distal margins thickened; inner margin with a blunt tooth at its proximal third; outer margin tuberculous, a somewhat larger tubercle at the distal third; upper surface very uneven, tuberculous and granulous, three tubercles much larger than the others. The outer margin of the propodus is nearly straight for most of its length, and is marked by sharp granules; the inner margin forms a very prominent lobe behind the dactylus; the upper surface has four

blunt longitudinal crests, the innermost one being very short. Each finger has a similar crest; the fingers meet along their prehensile edges. The lower surface of palm and fingers is also granulous.

The second, third and fourth pairs of feet are granulous, the carpal joints each with a large tubercle on the outer side.

Dimensions.—Of female with eggs, length and breadth 5.7 mm.; of immature female (figured), length 4.3, breadth 4.6 mm.

Localities.—Mamanguape stone reef, one male, soft shell; one female, type, Cat. No. 23755. Pernambuco stone reef at Ilha de Nogueira; one female, figured.

Color.—In formalin, a light pink, without spots.

This species approaches *P. sociata* Say, but in *P. rosea* the lateral marginal line extends much further back before turning inward; and the ornamentation of carapace and chelipeds is quite different.

MINYOCERUS ANGUSTUS (Dana).

Porcellana angusta DANA, Crust. U. S. Expl. Exped., I, 423, 1852; pl. XXVI, fig. 12, 1855.
Minyocerus angustus STIMPSON, Proc. Acad. Nat. Sci. Phila., X, 229 [67], 1858.
Porcellina stellicola MÜLLER, Arch. f. Natur., XXVIII, part I, 194, pl. VII, 1862.

This species was described by Dana from a specimen from Rio de Janeiro, one half as large as the one in hand. Dana's type is not extant. The individual in Dr. Branner's collection is an egg-bearing female. It does not accord in every respect with Dana's description and figure, but allowance has been made for difference in size and possible mutilation.

The front between the orbits is two-spined instead of three; of these spines, the one on the left side is much shorter than the one on the right, and apparently was broken previous to the last moult; it is possible that the median spine was also broken off and not renewed, there being only a very shallow lobe in its place. The outer orbital spines are advanced beyond the frontal sinuses. The eye is intermediate in length between its adjacent spines.

The right cheliped only is present. The merus has an inner distal spine. The carpus has a strong spine on the inner margin just anterior to the middle, and two smaller spines at the inner distal angle; the distal margin is spinulous. The palm increases gradually in width from the carpus to the fingers, which are less than one-third the length of the palm; fingers stout and narrowly gaping.

Dimensions of female.—Length, measured from tip of longest frontal spine, 6.7 mm.; width 4.8 mm.

Locality.—Mangroves, Parahyba River.

Color.—White, with marblings of orange-brown; a narrow median stripe of white extends from the posterior margin to a point in advance of the lateral spine. There is an irregular oblong patch of white on each branchial region, and in front of it a smaller transverse patch, and a third still smaller near the lateral spine.

Müller's figure is of a small individual, and shows the frontal teeth shorter, the carpus without spines, the fingers short as in our specimen; the color marks in general resemble those of our specimen, but in the latter the light median stripe is not continued to the front.

Family **CALLIANASSIDÆ.**

GLYPTURUS BRANNERI sp. nov.

Pl. VIII, figs. 5–8.

Dorsal suture very deep. Front with a short, acute, depressed rostrum, and on either side above the insertion of the antennæ, a shallower subacute projection.

Eyestalks subtriangular, with convex upper surface, and contiguous nearly to their narrow truncate extremities, which are obscurely dentate.

Terminal joint of the peduncle of the antennulæ about $1\frac{2}{5}$ times as long as the penult joint. Antennulæ nearly as long as the carapace.

The peduncle of the antenna is more slender than that of the antennula; its penult joint reaches the middle of the terminal joint of the peduncle of the antennula. The flagellum is more than twice as long as that of the antennula.

Outer maxillipeds similar to those of *G. acanthochirus;* the ischium and merus are wider, the propodus somewhat longer and narrower, the dactylus more slender than in that species. The outer surface is pubescent, the inner margin long-hairy.

The larger cheliped is finely and inconspicuously dentate on its lower margin. The merus is twice as wide as the ischium. The carpus is nearly as wide as the manus, and twice as wide as long. The palm is nearly as wide as long. The fingers cross when closed. The dactylus has three teeth on the prehensile edge. Smaller cheliped with the carpus and manus less than half as wide as in the larger cheliped, and elongate. Both chelipeds have tufts of long hair on the margins.

Inner caudal lamella as broad as long. Outer branch of the outer

lamella completely overlapping and coalesced with the inner branch, and only slightly shorter.

This species can be distinguished from *G. acanthochirus* Stimpson and *G. grandimanus* (Gibbes, as *Callianassa*) by its non-spinous front and chelipeds and the subequal length of the two branches of the outer caudal lamella.

Dimensions.—Length in median line, exclusive of antennæ, 52.2 mm.; length of carapace 14.9; length of carpus and propodus together, measured to end of pollex, 18.5 mm.

Type.—A male, from Mamanguape stone reef. Cat. No. 23756.

UPOGEBIA AFFINIS (Say).

Gebia affinis SAY, Jour. Acad. Nat. Sci. Phila., I, 241, 1818. SMITH, Vineyard Sound Report, 549 [255], pl. II, fig. 7, 1874.
Upogebia affinis STEBBING, Hist. Crust., 185, 1893.

Mamanguape stone reef; six specimens.

Parahyba River, mangroves; one specimen.

Maceio coral reef; three specimens.

Family PANULIRIDÆ.

PANULIRUS ECHINATUS Smith.

Panulirus echinatus SMITH, Trans. Conn. Acad. Sci., II, 20, 1869. POCOCK, Jour. Linn. Soc. London, Zoöl., XX, 516, 1890.

Pernambuco; one male.

Carapace, antennæ, first two segments of abdomen and upper half of meral joints of legs pinkish red; remainder of abdomen and legs dark blackish blue. No round spots as in *P. guttatus* (Latreille), which is green with yellow spots. The median spines of the carapace as well as all the prominent spines behind the anterior margin are smaller in *echinatus* than in *guttatus;* there are no rudimentary spines on the antennulary segment, and its two large spines are less divergent and less ascending. The penult segments of antennæ and antennulæ are considerably shorter in *echinatus.*

Family PENÆIDÆ.

PENÆUS SETIFERUS (Linnæus).

Cancer setiferus LINNÆUS, Sys. Nat., ed. 12, I, pt. 2, 1054, 1767.
Penæus fluviatilis SAY, Jour. Acad. Nat. Sci. Phila., I, 236, 1818.
Penæus setiferus MILNE EDWARDS, Hist. Nat. Crust., II, 414, 1837.

Maceio, on coral reef; one specimen.

PARAPENÆUS GOODEI Smith.

Parapenæus goodei SMITH, Proc. U. S. Nat. Mus., VIII, 176, 1885.

Maceio, on coral reef; one specimen.

XIPHOPENEUS KROYERI (Heller).

Penæus kroyeri HELLER, SB. Acad. Wiss. Wien., XLV, 1 Abth., 425, pl. II, fig. 51, 1862.
Xiphopeneus harttii SMITH, Trans. Conn. Acad. Sci., II, 28, pl. I, fig. 1, 1869.
Xiphopeneus kroyeri SMITH, Proc. U. S. Nat. Mus., VIII, 188, 1885.

Maceio, on coral reef; one specimen.

Family **ALPHEIDÆ.**

ALPHEUS HETEROCHÆLIS Say.

Alpheus heterochælis SAY, Jour. Acad. Nat. Sci. Phila., I, 243, 1818.
Alpheus heterochelis HERRICK, Mem. Nat. Acad. Sci., V, 372, pl. II (colored), 1891.

Mamanguape stone reef; eleven specimens.

Rio Parahyba do Norte, on mangroves; three specimens.

Rio Goyanna stone reef; one specimen.

Pernambuco stone reef at Ilha de Nogueira; one specimen.

Stone reef at Boa Viagem; one specimen.

Maceio coral reef; nine specimens.

ALPHEUS FORMOSUS Gibbes.

Alpheus formosus GIBBES, Proc. Amer. Assoc. Adv. Sci., III, 196 (32), 1850.
Alpheus poeyi GUÉRIN, in La Sagra's Hist. Cuba, 2nd part, vol. VII, p. XIX; vol. VIII, pl. II, fig. 10, 1857.

Natal, Rio Grande do Norte; one specimen.

Pernambuco stone reef at Ilha de Nogueira; one specimen.

Maceio coral reef; six specimens.

ALPHEUS CRISTULIFRONS Rathbun, nom. nov.

Alpheus obesomanus POCOCK, Jour. Linn. Soc. London, Zool., XX, 520, 1890 (nec Dana).

Maceio coral reef; two specimens.

SYNALPHEUS MINUS (Say).

Alpheus minus SAY, Jour. Acad. Nat. Sci. Phila., I, 245, 1818.
Synalpheus minus COUTIÈRE, Bull. Soc. Entom. France, 1898, No. 8, 190, fig. 4.

Maceio coral reef; three specimens.

Family HIPPOLYTIDÆ.

HIPPOLYSMATA WURDEMANNI (Gibbes).

Hippolyte wurdemanni GIBBES, Proc. Amer. Assoc. Adv. Sci., III, 197 [33], 1850.
Hippolysmata wurdemanni KINGSLEY, Proc. Acad. Nat. Sci. Phila., XXX, 1878, 89 [1].

Mamanguape stone reef; one specimen.

HIPPOLYSMATA RHIZOPHORÆ sp. nov.

Pl. VIII, fig. 9.

Female. Carapace with a median carina on its anterior fifth. Median spines three, one on the carapace proper, and two on the rostrum; extremity of rostrum a slender spine not reaching to the end of the first antennular segment; no inferior spines. An antennal spine present.

Antennular peduncles elongate, the second segment twice as long as the third; two slender flagella, the upper a little thicker than the lower in its basal portion, or for about 32 segments; the lower one twice as long as the carapace; the upper one shorter, at least in the single specimen in hand.

Basal antennal spine short. Scale short, extending half the length of the third antennular segment, broad, extremity rounded; outer distal spine strong. Peduncle equal to the scale in length; flagellum two-thirds the length of the body.

External maxillipeds extending beyond the antennular peduncle by the length of the dactylus and half the propodus. Propodus with a distal spine. Dactylus with a marginal row of spines in pairs, and two or three spines at the extremity.

First pair of feet reaching a little beyond the propodus of the maxilliped. Carpus intermediate in length between the palm and the propodus. Palm with subparallel margins; fingers two-thirds as long as palm.

The carpus of the second pair of feet, when extended, reaches to the end of the maxilliped. The carpus is 24-jointed. Palm and fingers subequal in length.

The sixth segment of the abdomen is one and one-half times as long as the fifth. The telson has four rather large spines forming a rectangle on the dorsal surface; the extremity is subtruncate, with two long submedian spines and two shorter spines outside of these. The inner caudal lamina is oval-lanceolate and extends behind the telson

to a distance equaling one-third the length of the telson; the outer lamina is longer and broader than the inner, its distance behind the telson equaling fully one-half the length of the telson.

Dimensions.—Female: Length from tip of rostrum to tip of telson 27 mm.; length of carapace and rostrum 9; length of rostrum 2.5 mm.

Type locality.—Rio Parahyba do Norte, on mangroves; one ovigerous female. Cat. No. 23757.

Family PALÆMONIDÆ.

PALÆMON BRACHYLABIS sp. nov.

Pl. VIII, fig. 10.

Female. Dorsal crest arising a little in front of the middle of the carapace, or about two-fifths the distance behind the orbits. Crest slightly ascending for its proximal half, strongly ascending for its distal half. Rostrum overreaching the antennal scale for its distal fourth. Upper margin of crest armed with 9 or 10 teeth; the proximal 7 or 8 are near together and equidistant; the next one is about twice the distance from the others; the last one is near the tip of the rostrum; 2 or 3 of them are posterior to the orbit. The inferior margin is armed with 3 or 4 teeth, the distal one at some distance from the extremity. Terminal third of rostrum very slender. Upper flagellum of inner antennæ with 10 segments united, 14 free.

Carpus of second pair of feet reaching a little beyond the rostrum. Carpus as long as the palm and half the fingers. Palm two and a half times as long as the fingers, not swollen. Fingers not gaping.

Dimensions.—Female: Length of body 37.2 mm.; length of carapace and rostrum 16.4; length of rostrum 9.4 mm.

Type locality.—Mamanguape stone reef; five specimens.

Additional locality.—Rio Parahyba do Norte, on mangroves; two specimens. Cat. No. 23758.

The long upturned rostrum with $\frac{9-10}{3-4}$ teeth, and the very short fingers of the second pair of feet readily distinguish this species.

BITHYNIS ACANTHURUS (Wiegmann).

Palæmon acanthurus WIEGMANN, Arch. f. Natur., II, part 1, 150, 1836.
Palæmon forceps MILNE EDWARDS, Hist. Nat. Crust., II, 397, 1837.
Palæmon forceps VON MARTENS, Arch. f. Natur., XXXV, part 1, 28, pl. II, fig. 4, 1869.

Pernambuco, on mangroves; two specimens.

Market at Maceio, Alagôas; said to have come from Lagoa do Norte, a large lake near Maceio.

UROCARIS LONGICAUDATA Stimpson.

Urocaris longicaudata STIMPSON, Proc. Acad. Nat. Sci. Phila., XII, 39 [108], 1860. KINGSLEY, Proc. Acad. Nat. Sci. Phila., XXXI, 424, 1879 [1880].

Off Jacuma, Parahyba, 15 feet; one specimen.

Order **STOMATOPODA.**

Family **CHLORIDELLIDÆ.**

GONODACTYLUS CHIRAGRA (Fabricius).

Squilla chiragra FABRICIUS, Ent. Syst., II, 513, 1793. DESMAREST, Consid. Crust., 251, pl. XLIII, 1825.
Gonodactylus chiragra LATREILLE, Encyc. Méth., Hist. Nat., Entom., X, 473, 1825.

Off Jacuma, Parahyba, 15 feet; one specimen.

Pernambuco stone reef at Ilha de Nogueira; three specimens.

Maceio coral reef; 31 specimens.

PSEUDOSQUILLA OCULATA (Brullé).

Squilla oculata BRULLÉ in Webb and Berthelot, Hist. Nat. Isles Canaries, II, part 2, p. 18, 1840.
Pseudosquilla oculata MIERS, Ann. Mag. Nat. Hist. (5), V, 110, pl. III, figs. 3 and 4, 1880.

Maceio coral reef; two specimens.

Besides the localities indicated by Bigelow,[1] there are specimens in the National Museum from Honolulu and from Clarion Island, off the west coast of Mexico.

[1] Proc. U. S. Nat. Mus., XVII, 500, 1894.

PLATE VIII.

Fig. 1. *Uca thayeri*, ♂, $\frac{4}{5}$ nat. size.
2. *Uca thayeri*, ♂, inner surface of large chela, $\frac{4}{5}$ nat. size.
3. *Porcellana rosea*, ♀, $2\frac{2}{5}$ nat. size.
4. *Pisosoma greeleyi*, ♂, $2\frac{2}{5}$ nat. size.
5. *Glypturus branneri*, ♂, front and antennæ, $1\frac{3}{5}$ nat. size.
6. *Glypturus branneri*, ♂, caudal extremity, $1\frac{1}{5}$ nat. size.
7. *Glypturus branneri*, ♂, outer maxilliped, $1\frac{3}{5}$ nat. size.
8. *Glypturus branneri*, ♂, large cheliped, $1\frac{1}{5}$ nat. size.
9. *Hippolysmata rhizophoræ*, ♀, $1\frac{1}{5}$ nat. size.
10. *Palæmon brachylabis*, ♀, $1\frac{1}{5}$ nat. size.